

Rock Island Arsenal
Recuperator Building
(Shop R, Building 210)
Rodman Avenue and Gronen Street
Rock Island
Rock Island County
Illinois

HAER No. IL-20-Z

HAER
ILL,
81-20C1L,
3/210-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
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3/210

HISTORIC AMERICAN ENGINEERING RECORD

ROCK ISLAND ARSENAL
RECUPERATOR BUILDING
(Shop R, Building 210)
HAER No. IL-20Z

Location: Rodman Avenue and Gronen Street,
Rock Island Arsenal,
Rock Island,
Rock Island County, Illinois
UTM: 15.705350.4598640
Quad: Davenport East

Date of Construction: 1920-1921

Present Owner and Occupant: U.S. Army

Present Use: Machine shop

Significance: During and immediately after World War I,
the Ordnance Department erected a number of
buildings on Rodman Avenue, just west of the
nineteenth-century, Greek Revival stone
shops. To maintain the "grand boulevard"
appearance of Rodman Avenue, these buildings
were designed in a classical revival style.
Completed in 1921, the Recuperator Building
was part of this construction program. It
is a significant example of military
industrial design that expanded the
arsenal's manufacturing program while
preserving its overall architectural
integrity. The Recuperator Building is part
of the Rock Island Arsenal National Register
Historic District.

Historian: Jeffrey A. Hess, February 1985

Architectural Historian: David Arbogast, February 1985

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: According to original plans on file in the Rock Island Arsenal Engineering Plans and Services Division, the building was designed during the summer and fall of 1920. It was completed in 1921 (Nothstein and Stephens, pp. 279, 318).
2. Architect: Not known. The building was probably designed by Ordnance Department staff.
3. Original and subsequent owners: U.S. Army.
4. Builder, contractor, supplier: Not known.
5. Original plans and construction: The Rock Island Arsenal Facilities Engineer's Office has original plans and elevations, dated 1920, that show that the building was originally planned with two distinct types of construction. On the north, fronting Rodman Avenue, was a flat-roofed, four-story, reinforced-concrete structure that abutted on the south a one-and-one-half-story, steel-framed structure with triple-gable roof and extended banks of industrial steel sash. The four-story, reinforced-concrete section is documented by a photograph originally published in 1922 (War's Greatest Workshop, p. 29), a copy of which is in the picture collection of the Rock Island Arsenal Historical Office (see HAER Photo No. IL-20Z-8). It is captioned, in part, "Shop R, equipped for the manufacture of recuperators." The same collection also has a photograph, dated 1945, that documents the construction of the steel-framed, one-and-one-half-story section. It is captioned, "Looking northeast at Shop 'R' Building 210 / 137-A / 27 February 1945."
6. Alterations and additions: At undetermined dates, a one-story, reinforced-concrete addition was erected at the northwest corner and much of the original industrial steel sash in the four-story structure was infilled with glass block.

In 1984, the one-and-one-half-story, steel-framed structure was demolished (Interview with Bouilly).

B. Historical Context:

During World War I, the Ordnance Department experienced considerable difficulty in finding private contractors capable of manufacturing

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recuperators, which are a mechanism that regulates the return of an artillery gun from recoil position to firing position. Since Rock Island Arsenal had experimented with recuperator production toward the end of the war, it was assigned the task of developing a manufacturing program for the devices after the Armistice. The Recuperator Building was constructed in 1921-1922 to fulfill this responsibility (Nothstein and Stephens, pp. 317-318).

Although the building was equipped with the necessary machinery in the early 1920s, it apparently never entered large-scale recuperator production (Nothstein and Stephens, pp. 317-318). During the 1920s and 1930s, most of the building was used for machine storage; from 1922 to 1942, the top floors of the reinforced-concrete section served as headquarters for the arsenal's administrative staff (Slatterly, p. 1; Interview with Bouilly). During World War II, the building was used for the machining and assembling of various ordnance components (Nothstein and Stephens, p. 397; see HAER Photo No. IL-20Z-9). It has continued in that role to the present time. The Recuperator Building was designated as "Shop R" at the time of its completion (War's Greatest Workshop, p. 29). It has been designated as "Building 210" at least since World War II ("Industrial Facilities Inventory"; for additional documentation, see HAER No. IL-20).

Prepared by: Jeffrey A. Hess
 MacDonald and Mack Partnership
 February 1985

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. Architectural character: The building is a large manufacturing plant exhibiting the style which came to be known as Stripped Classicism, later popularized by architects such as Paul Cret, primarily for Federal Buildings, during the Great Depression. The building has a main block with two later additions, which although attached to the building, bear little relation to the building. Excluding the additions, it is four stories with a flat roof.
2. Condition of fabric: The building is well-maintained and is in good condition.

B. Description of Exterior:

1. Overall dimensions: The building measures 227'(11 bays) x 80'(4 bays) and is four stories tall without a basement or an attic.

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2. Foundations: Poured, reinforced concrete.
3. Walls: Poured, reinforced concrete frame (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4). The ground-floor walls are solid concrete. Colossal concrete pilasters (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4) rising from the ground floor to the entablature divide the elevations into a regular bay system. The northeast and northwest (HAER Photo No. IL-20Z-4) corners are given emphasis by sets of three bays with heightened parapet walls having, in addition to the regular entablature, the Rock Island Arsenal insignia centered in the top. All elevations have dark gray concrete.
4. Structural systems: Poured, reinforced concrete walls, exterior frame, and round interior columns (HAER Photo Nos. IL-20Z-5 and IL-20Z-7) with spread capitals. Floor and roof systems are poured concrete.
5. Openings:
 - a. Doorways: Two principal doorways (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4) are located at the east and west ends of the north elevation. They contain modern overhead doors. Personnel doorways are located in the east and west elevations. They contain non-original wood doors. At each end of the south elevation is a large, plain, rectangular doorway opening containing a double-hung wood freight door with eight panels in both the top and the bottom sections.
 - b. Windows: The second through fourth floor window walls of the three bays of the northeast and northwest corners (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4) have been filled with glass block. The remaining window wall areas (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4) of all four elevations from the second through the fourth floors contain industrial steel sash. The window wall area of the west end of the first floor has been filled with brick.
6. Roof:
 - a. Shape, covering: The roof is flat and is covered tar and gravel.
 - b. Cornice, eaves: The roof is surrounded by a parapet wall (HAER Photo Nos. IL-20Z-1, IL-20Z-2, and IL-20Z-4) and has an internal water drainage system tied to an underground drainage system.

7. Ancillary structures: There are two additions which, because of their size and differing construction, merit separate descriptions. These additions are located on the west and south sides.

The west addition (HAER Photo Nos. IL-20Z-2 and IL-20Z-4) is a rectangular-plan, one-story, flat-roofed structure. Exterior concrete frame walls are filled with structural clay tile and parged with dark gray concrete. In the north wall are sets of four two-over-two, double-hung, wood sash in plain, structural tile openings.

The original wing to the south has been demolished and a new addition is in the process of erection. It is a very large, one-story, gable-roofed structure with the north-south gable ridge abutting the third-floor, south wall of the main building.

C. Description of Interior:

1. Floor plans: The building is an industrial factory and contains few partitions. They are primarily related to stairways, elevators, and the restroom, which is located at the east end of the first floor. The two freight elevators are located in the south-east and southwest corners. The lower two floors are open shop areas and the upper two floors are open storage areas.
2. Stairways: There are two stairways located in the southeast and southwest corners of the building. They run from the first floor to the roof and are steel, U-plan stairs with intermediate landings. The landings are covered with concrete and there are pipe railings painted black. Square and rectangular steel newel posts terminate each run of steps.
3. Flooring: First-story flooring (HAER Photo Nos. IL-20Z-5 and IL-20Z-6) is poured concrete with a sealer applied to it. The second through fourth stories have end-grain block wood flooring (HAER Photo No. IL-20Z-7) over the concrete.
4. Wall and ceiling finishes: Outer first-floor walls and columns (HAER Photo No. IL-20Z-5) are painted concrete and painted brick infill in the west window openings. Interior partition walls are painted plaster; wire cage; original, vertical, beaded, tongue-and-groove, board walls (HAER Photo No. IL-20Z-6) with some having sixteen-light, fixed, wood sash, and demountable partitions. The ceiling (HAER Photo No. IL-20Z-5) is painted concrete.

Outer second-floor walls and columns (HAER Photo No. IL-20Z-7) are painted concrete. Partition walls include painted plaster, wire cage, and demountable partitions. The ceiling (HAER Photo No. IL-20Z-7) is painted concrete.

The third-floor outer walls and columns are painted concrete. The interior walls are painted plaster and demountable gypaum board partitions. The ceiling is painted concrete.

The outer fourth floor walls and columns are painted concrete. Interior walls are painted plaster. The ceiling is painted concrete.

5. Openings:

- a. Doorways and doors: Four original doorways in the south (rear) elevation, now opening to the south addition, contain heavy, flat, steel doors which may be original. One original wood doorway (HAER Photo No. IL-20Z-6) survives with a sliding door having a plain frame around a large panel of diagonal, beaded, tongue-and-groove boards. All other doorways are of relatively recent vintage appropriate to their respective partitions.
- b. Windows: Window openings (HAER Photo No. IL-20Z-5) are concrete with no casings or other trim.

6. Hardware: Original door hardware survives on the sliding wood door, consisting of a steel track and a pair of steel brackets and a steel pull. Original steel window hardware survives for the operable portions of the window walls.

8. Mechanical equipment:

- a. Heating, air conditioning, ventilation: The building is heated by steam radiators. There is no mechanical air conditioning or ventilation system.
- b. Lighting: Artificial illumination is by means of fluorescent (HAER Photo Nos. IL-20Z-6 and IL-20Z-7) electrical fixtures. Nothing remains of the original artificial lighting system.
- c. Plumbing: Original steel toilet stalls and toilets survive in the restroom. They are typical for their period.
- d. Elevators: Both original freight elevators survive in an upgraded and modernized condition.
- e. Machinery: No original machinery survives in the building. For security reasons no information was available regarding existing machinery.

D. Site:

- 1. General setting and orientation: The building anchors the south-

west corner of Rodman Avenue, the arsenal's principal street, and Gronen Street. Gronen Street is in the process of being eradicated with new construction of a building connecting Building 210 with Building 220, a machine shop. Abutting the west elevation of the west addition is Building 208, a overhaul and assembly shop. Across Rodman Avenue to the west is Building 331, a warehouse. South of the building runs a set of railroad tracks, south of which runs Kingsbury Avenue. The site slopes gently to the south.

Prepared by: David Arbogast
Architectural Conservator
February 1985

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings:

The Rock Island Arsenal Engineering Plans and Services Division has the following original drawings that show the major details of the 1921 construction:

"Recuperator Building, Longitudinal Section," August 18, 1920.

"Recuperator Building, North Elevation," August 18, 1920, RIA B210-B4.

"Recuperator Building, South and Rear Elevation," August 18, 1920, RIA B210-B3.

"Recuperator Building, West Elevation," August 18, 1920, RIA B210-B1.

"Elevations, Recuperator Building, Steel Shops," RIA B210-B4.

"Erection Plans, Recuperator Building, Steel Shops," October 12, 1920, RIA B210-9.

"Floor Plan, Recuperator Building, Steel Shops," October 12, 1920, RIA B210-A3.

"Sash Details, Recuperator Building, Steel Section," January 10, 1921, RIA B210-B12.

B. Early Views:

The following photographs are in the picture collection of the Rock Island Arsenal Historical Office:

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Photograph of the north and west elevations, originally published in 1922 (War's Greatest Workshop, p. 29); captioned, in part, "Shop R, equipped for the manufacture of recuperators." View documents the original construction of the four-story, reinforced-concrete section of the building.

Photograph of the interior of the steel-framed section showing assembly of gun mounts in 1939, captioned "513-994 May 24, 1939 / Shop 'R' Annex, 3" A.A. Gun Mounts, M2A2" (see HAER Photo No. 1L-20Z-9).

Photograph of the west and south elevations, captioned, "Looking northeast at Shop 'R' Building No. 210 / 137-A / 27 February 1945." View documents the original construction of the one-and-one-half-story, steel-framed section.

C. Interviews:

Interview with Robert Bouilly, Senior Historian, Rock Island Arsenal Historical Office, conducted by Jeffrey A. Hess, May 30, 1984. Provided information of the building's use as arsenal headquarters between the two World Wars and supplied demolition date for the steel-framed section of building.

D. Bibliography:

1. Primary and unpublished sources:

Hess, Jeffrey A., and Mack, Robert C. "Historic Properties Report Rock Island Arsenal, Rock Island, Illinois". Prepared by MacDonald and Mack Partnership, and Building Technology Incorporated for the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, U.S. Department of the Interior, 1985. The report, with accompanying inventory cards, is filed as field records in the Prints and Photographs Division, Library of Congress, under HAER No. 1L-20.

"Industrial Facilities Inventory, Rock Island Arsenal," prepared by U.S. Army Corps of Engineers, Rock Island District, 1946. Rock Island Arsenal Engineering Plans and Services Division. Lists building as "Building 210."

Real Property Cards, Rock Island Arsenal Engineering Plans and Services Division. Briefly describes building's structural characteristics, and maintenance history.

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Slattery, Thomas J. "History of Building 360, RIA Headquarters 1899-1922." N.d. Rock Island Arsenal Historical Office. Briefly mentions use of building as arsenal headquarters between the two World Wars.

2. Secondary and published sources:

Nothstein, Ira O. and Stephens, Clifford W. A History of Rock Island and Rock Island Arsenal from Earliest Times to 1954. Rock Island Arsenal, 1965. 3 vols. Describes construction and uses of building.

War's Greatest Workshop Rock Island Arsenal. N. pl.: Arsenal Publishing Co. of the Tri-Cities, 1922. Rock Island Arsenal Historical Office. Describes planning and construction of the 1919 addition.

PART IV. PROJECT INFORMATION

This project was part of a program initiated through a memorandum of agreement between the National Park Service and the U.S. Department of the Army. Stanley J. Fried, Chief, Real Estate Branch of Headquarters DARCOM, and Dr. Robert J. Kapsch, Chief of the Historic American Buildings Survey/Historic American Engineering Record, were program directors. Sally Kress Tompkins of HABS/HAER was program manager, and Robie S. Lange of HABS/HAER was project manager. Building Technology Incorporated, Silver Spring, Maryland, under the direction of William A. Brenner, acted as primary contractor, and MacDonald and Mack Partnership, Minneapolis, was a major subcontractor. The project included a survey of historic properties at Rock Island Arsenal, as well as preparation of an historic properties report and HABS/HAER documentation for 38 buildings. The survey, report, and documentation were completed by Jeffrey A. Hess, historian, Minneapolis; Barbara E. Hightower, historian, Minneapolis; David Arbogast, architectural historian, Iowa City, Iowa; and Robert C. Mack, architect, Minneapolis. The photographs were taken by Robert A. Ryan, J Ceronie, and Bruce A. Harms of Dennett, Muessig, Ryan, and Associates, Ltd., Iowa City, Iowa. Drawings were produced by John Palmer Low, Minneapolis.